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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/522,407	03/09/2000	Toshihiro Shima	Q58164	4033

7590 06/07/2004  
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EXAMINER

REITZ, KARL

ART UNIT	PAPER NUMBER
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2624

DATE MAILED: 06/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/522,407

Applicant(s)

SHIMA, TOSHIHIRO

Examiner

Karl R. Reitz

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 09 April 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 March 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date: \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

1. Response has been made of record. Claims 10 and 11 have been amended.

Claims 1-13 are pending.

2. The objections to the title, abstract, body of the specification and drawings of the invention are withdrawn in light of the amendment.

3. The objection to claim 11 for lack of antecedent basis is also withdrawn with respect to the amendment.

### ***Response to Arguments***

4. Applicant's arguments filed on 9 April 2004 have been fully considered but they are not persuasive.

5. Applicant argues that the difference between the disclosed invention and the combination of EP '032 and EP '067 is that the combination does not disclose, "varying the assigned priorities of different types of tasks" (amendment page 17 line 9).

However, EP '032 discloses altering the order of execution by shifting processing from one job to another in order to maximize efficiency (col. 6 lines 13-24) and EP '067 specifically discloses, "tasks are assigned priorities" (col. 14 lines 26-28). Thus from the teaching by EP '032 that efficiency can be increased by assigning priority to jobs and the teaching by EP '067 of prioritizing tasks, it would follow that efficiency can be increased by prioritizing the tasks, as taught by EP '067, according to the method taught by EP '032. Since the goal would be the increase of efficiency, it would be obvious that each individual task can be executed with a priority higher or lower than any other task or tasks in order to achieve this increase in efficiency.

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6. Applicant argues that EP '032 and EP '067 fail to disclose the auxiliary storage since print data is not read from the auxiliary storage (amendment page 17 lines 19-20). However both EP '032 and EP '067 disclose reading print data from auxiliary storage. In the system of EP '032, jobs are sent to "print data storage section 2a" and code generation and printing on the stored jobs are executed later (col. 6 lines 13-20). While for EP '032 it may be true that the job (H2) that will undergo generation and printing first is not stored (in order to avoid the delay caused by writing to and reading from storage), it is very clear that later jobs (H1, H3, and H4 in the example found on col. 6 lines 12-30) are stored in print data storage section 2a. In the system of EP '067, the "large-capacity auxiliary storage" stores the print data, since it is specifically mentioned that the stored data is used to print multiple copies of a job without requiring the job to be sent multiple times from the host (col. 17 lines 46-55).

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1, 2, 4 and 6-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shima (EP 820 032 A2) and Shima et al (EP 0 782 067 A2).

9. In accordance with claim 1, Shima discloses a printer 1 (figure 1) with an auxiliary storage 2a (col. 4 lines 13-17).

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10. Shima further discloses that the printer has a printing task (print request preparation section 4) for controlling the print engine in accordance with a request for printing (col. 5 lines 14-19).

11. Shima further discloses that the printer has an image generation task (intermediate code generation section 3) for generating requests for printing (col. 4 lines 18-19 and col. 5 lines 14-18).

12. Shima further discloses that the printer has a task for writing print data to the auxiliary storage, performed by the print data reception section 2 (col. 5 lines 34-38).

13. Shima further discloses that the printer has a task for reading print data from the auxiliary storage; in Shima's system, print job data is read from the auxiliary storage and converted into intermediate code by the intermediate code generation section 3 (col. 5 lines 38-42).

14. Shima further discloses that each task is selected and executed according to the specific priority of each job; in Shima's system a job is assigned a priority level, when multiple jobs are received, the tasks are executed with priorities based on the job priorities, thus the tasks described above are performed on the higher priority job first, even if the another job was received first and is already being processed (col. 5 line 53 – col. 6 line 20).

15. Shima discloses a prioritization of the writing task and the image generation task; in Shima's system, intermediate code generation for the highest priority job is executed with the highest priority, then data for the remaining jobs is written to the auxiliary storage with the next highest priority and intermediate code generation for those jobs is

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executed with the least priority (col. 6 lines 13-20). In Shima's system, task priority is based upon size or transfer speed of a job (col. 5 line 57 – col. 6 line 2).

16. However, Shima does not disclose expressly that the detection of a predetermined event causes a variation in the priority of the tasks.

17. Shima et al. discloses tasks, including a reception task, which must include writing to storage since received data is stored until it can be processed and an image generation task, and assigning priorities to each task (col. 14 lines 12-28). These tasks are executed based on priority in order to speed up printing time (col. 14 lines 26-28 and col. 17 line 59). Thus, Shima et al. teaches altering the priorities of the tasks involved in printing in order to speed up processing. From that teaching, it follows the priorities of each task can be altered in order to minimize processing speed. Thus the writing task would be executed with a higher priority than the image generation task if it would result in a decrease in processing time.

18. Shima and Shima et al. are combinable because they are from the same field of endeavor, namely image forming apparatuses that can alter the priority of printing.

19. Therefore, at the time of invention, it would have been obvious to a person of ordinary skill in the art use a prioritization scheme like Shima et al.'s to execute tasks in orders depending on what was occurring during print processing.

20. The motivation for doing so would have been to allocate resources away from areas where they are no longer needed to areas that still require the use of resources to speed up processing time (Shima et al.: col. 17 line 59).

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21. Applicant argues that the difference between the disclosed invention and the combination of EP '032 and EP '067 is that the combination does not disclose, "varying the assigned priorities of different types of tasks" (amendment page 17 line 9).

However, EP '032 discloses altering the order of execution by shifting processing from one job to another in order to maximize efficiency (col. 6 lines 13-24) and EP '067 specifically discloses that "tasks are assigned priorities" (col. 14 lines 26-28). Thus from the teaching by EP '032 that efficiency can be increased by assigning priority to jobs and the teaching by EP '067 of prioritizing tasks, it would follow that efficiency can be increased by prioritizing the tasks, as taught by EP '067, according to the method taught by EP '032. Since the goal would be the increase of efficiency, it would be obvious that each individual task can be executed with a priority higher or lower than any other task or tasks in order to achieve this increase in efficiency.

22. In accordance with claims 2 and 6, as described for claim 1, it would be obvious to execute any task with higher priority than other tasks in order to increase efficiency. This logic applies to the printing task, writing task and reading task as well.

23. In accordance with claim 4, Shima discloses that the priorities are varied based on the occurrence of predetermined events; in one embodiment of Shima's system, priority is based upon size or transfer speed of a job (col. 5 line 57 – col. 6 line 2).

24. In accordance with claim 7, Shima discloses a printer 1 (figure 1) with an auxiliary storage 2a for storing print data (col. 4 lines 13-17).

25. Shima further discloses a print engine for executing printing (col. 5 line 19).

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26. Shima further discloses that the printer has a means for writing print data to the auxiliary storage, performed by the print data reception section 2 (col. 5 lines 34-38).

27. Shima further discloses that the printer has a means for reading print data from the auxiliary storage; in Shima's system, print job data is read from the auxiliary storage and converted into intermediate code by the intermediate code generation section 3 (col. 5 lines 38-42).

28. Shima further discloses that the printer has an image generation means (intermediate code generation section 3) for generating requests for printing (col. 4 lines 18-19 and col. 5 lines 14-18).

29. Shima further discloses that the printer has a printing execution means (print mechanism 6) for controlling the print engine (col. 5 lines 19-23).

30. As described for claim 1, it would be obvious to execute any task (or means) with higher priority than other tasks in order to increase efficiency. This logic applies to the writing task and generating task as well.

31. In accordance with claim 8, Shima further discloses that data stored in auxiliary storage include print data sent from an external device (col. 4 lines 44-49).

32. In accordance with claim 9, Shima further disclose that data stored in auxiliary storage include at least part of request for printing data (col. 5 lines 9-38).

33. In accordance with claim 10, Shima discloses that the printer 1 has a writing process for writing print data to the auxiliary storage 2a, performed by the print data reception section 2 (col. 5 lines 34-38).



34. Shima further discloses that the printer has a reading process for reading print data from the auxiliary storage; in Shima's system, print job data is read from the auxiliary storage and converted into intermediate code by the intermediate code generation section 3 (col. 5 lines 38-42).

35. Shima further discloses that the printer has a generation process (performed by the intermediate code generation section 3) for generating requests for printing (col. 4 lines 18-19 and col. 5 lines 14-18).

36. Shima further discloses that the printer has a printing process (performed by the print mechanism 6) for printing based on the request for printing (col. 5 lines 19-23).

37. Shima does not disclose expressly that during image generation, the printer be allowed to continue writing data to the auxiliary storage.

38. Shima et al. discloses that the process of receiving print data, which includes writing the data to auxiliary storage, be controlled so that it can be executed even while the image generation process is being executed (col. 13 lines 35-37).

39. Shima and Shima et al. are combinable because they are from the same field of endeavor, namely image forming apparatuses that can alter the priority of printing.

40. Therefore, at the time of invention, it would have been obvious to a person of ordinary skill in the art to allow the printer to continue to receive and store data during image generation as disclosed in Shima et al.

41. The motivation for doing so would have been to allow data to be received from host devices during image generation in order to minimize the time a host device must wait to transfer data to the printer.

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42. Applicant argues that EP '032 and EP '067 fail to disclose the auxiliary storage since print data is not read from the auxiliary storage (amendment page 17 lines 19-20). However both EP '032 and EP '067 disclose reading print data from auxiliary storage. In the system of EP '032, jobs are sent to "print data storage section 2a" and code generation and printing on the stored jobs are executed later (col. 6 lines 13-20). While for EP '032 it may be true that the job (H2) that will undergo generation and printing first is not stored (in order to avoid the delay caused by writing to and reading from storage), it is very clear that later jobs (H1, H3, and H4 in the example found on col. 6 lines 12-30) are stored in print data storage section 2a. In the system of EP '067, the "large-capacity auxiliary storage" stores the print data, since it is specifically mentioned that the stored data is used to print multiple copies of a job without requiring the job to be sent multiple times from the host (col. 17 lines 46-55).

43. In accordance with claim 11, Shima discloses that the printer 1 has a writing process for writing print data to the auxiliary storage, performed by the print data reception section 2 (col. 5 lines 34-38).

44. Shima further discloses that the printer has a reading process for reading print data from the auxiliary storage; in Shima's system, print job data is read from the auxiliary storage and converted into intermediate code by the intermediate code generation section 3 (col. 5 lines 38-42).

45. Shima further discloses that the printer has a generation process (performed by the intermediate code generation section 3) for generating requests for printing (col. 4 lines 18-19 and col. 5 lines 14-18).

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46. As described for claim 1, it would be obvious to execute any task (or process), including the writing process, with higher priority than other tasks in order to increase efficiency.

47. In accordance with claims 12 and 13, Shima discloses operating a printer 1 (figure 1) with an auxiliary storage 2a (col. 4 lines 13-17) and a print engine (col. 5 line 19). Shima further discloses that printer is operated by executing tasks is according to the specific priority of each task; in Shima's system a job is assigned a priority level, if one job has a higher priority than another, the tasks are performed on the higher priority job first, even if the other job was received first and is already being processed (col. 5 line 53 – col. 6 line 20).

48. Shima discloses that the printer 1 has a writing task for writing print data to the auxiliary storage, performed by the print data reception section 2 (col. 5 lines 34-38).

49. Shima further discloses that the printer has a reading task for reading print data from the auxiliary storage; in Shima's system, print job data is read from the auxiliary storage and converted into intermediate code by the intermediate code generation section 3 (col. 5 lines 38-42).

50. Shima further discloses that the printer has an image generation task (performed by the intermediate code generation section 3) for generating requests for printing (col. 4 lines 18-19 and col. 5 lines 14-18).

51. Shima further discloses that the printer has a printing task (print request preparation section 4) for controlling the print engine in accordance with a request for printing (col. 5 lines 14-19).

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52. Shima further discloses that priority level of the printing task be high; in Shima's system multiple jobs sent to the printer are assigned priority based on how quickly they can be made ready for printing, thus printing is started as quickly as possible while the remaining jobs are processed so that printing can continue as soon as the job that is currently printing finishes, this is done to maximize the efficiency of the print engine (col. 4 line 44 – col. 5 line 24).

53. Shima does not disclose expressly a record medium for recording a program for operating the printer.

54. Shima et al. discloses a storage medium with a program for a print system (claim 17).

55. Shima and Shima et al. are combinable because they are from the same field of endeavor, namely image forming apparatuses that can alter the priority of printing.

56. Therefore, at the time of invention, it would have been obvious to a person of ordinary skill in the art to use a program to operate the printer of Shima's system.

57. The motivation for doing so would have been to implement a method of controlling the printing system.

58. As described for claim 1, it would be obvious to execute any task (or process) with higher priority than other tasks in order to increase efficiency. This logic applies to the writing, reading, printing and image generating tasks as well.

59. Claims 3 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shima and Shima et al. in view of Utsunomiya (5,822,500).

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60. In accordance with claim 3, Shima and Shima et al. do not disclose expressly that the predetermined event of claim 1 be the elapse of a specified length of time.

61. Utsunomiya discloses altering the order of tasks performed by a printer based on the elapse of a predetermined time period; specifically in Utsunomiya's system, a timer is started while image data is being generated for one print job, when the timer has elapsed to a set limit, the development of this job's image data is temporarily stopped and the development of the image data for the next job is started (col. 6 lines 4-23).

62. Shima, Shima et al. and Utsunomiya are combinable because they are from the same field of endeavor, namely image forming apparatuses that can alter the priority of printing.

63. Therefore, at the time of invention, it would have been obvious to a person of ordinary skill in the art to prioritize tasks, as taught in Shima et al., based on the elapse of a certain time, as taught in Utsunomiya.

64. The motivation for doing so would have been to allow small documents to print without having to wait for the completion of a much larger document that takes longer to process (Utsunomiya: col. 6 lines 12-19).

65. In accordance with claim 5, Shima and Shima et al. do not disclose expressly that the predetermined event be a judgment that the quantity of requests for printing exceeds a specific number.

66. Utsunomiya discloses altering the order of tasks performed by a printer based on the number of print requests; specifically in Utsunomiya's system, a timer is started while image data is being generated for one print job, when the timer has elapsed to a

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set limit, the development of the first image data is temporarily stopped and the development of the image data for the next job is started, however if only one job has been submitted, the document is printed without interruption, thus the process of varying task order is only undertaken if the number of requests submitted is greater than one (col. 6 lines 4-23).

67. Shima, Shima et al. and Utsunomiya are combinable because they are from the same field of endeavor, namely image forming apparatuses that can alter the priority of printing.

68. Therefore, at the time of invention, it would have been obvious to a person of ordinary skill in the art to prioritize tasks, as taught in Shima et al., based on the number of submitted requests, as taught in Utsunomiya.

69. The motivation for doing so would have been to allow small documents to print without having to wait for the completion of a much larger document that takes longer to process (Utsunomiya: col. 6 lines 12-19).

#### ***Contact Information***

70. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karl R. Reitz whose telephone number is (703) 305-8696. The examiner can normally be reached on Monday-Friday 8:00-4:30.

71. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David K. Moore can be reached on (703) 305-7452. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

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72. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-9700.

A handwritten signature in black ink, appearing to read "David Moore", with a stylized flourish at the end.

KRR

**DAVID MOORE**  
**SUPERVISORY PATENT EXAMINER**  
**TECHNOLOGY CENTER 2600**